

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 3 and 5-13 are pending in this application. Claims 1, 3 and 5-10 are amended; new Claim 13 is added; and Claims 2 and 4 are canceled without prejudice or disclaimer by the present amendment. Support for the new and amended claims can be found in the original specification, claims and drawings.¹ No new matter is presented..

In the outstanding Office Action, Claims 1-7 and 9-12 were rejected under 35 U.S.C. § 103(a) as unpatentable over Onoe et al. (Computer Communications, vol. 21, no. 14, XP-004146583, pp. 1226-1243 “Media Scaling Applied to Multicast Communications”, September 15, 1998, hereinafter Onoe) in view of Hundscheidt et al. (U.S. Pub. No. 2002/0085506, hereinafter Hundscheidt); and Claim 8 was rejected under 35 U.S.C. § 103(a) as unpatentable over Onoe et al. in view of Hundscheidt and in further view of Lundby (U.S. Patent No. 6,856,604).

The outstanding Office Action rejected Claims 1-7 and 9-12 under 35 U.S.C. § 103 as unpatentable over Onoe in view of Hundscheidt. The Official Action cites Onoe as disclosing Applicants’ invention with the exception of the use of mobile stations. The Office Action cites Hundscheidt as disclosing this claimed feature and states that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to arrive at Applicants’ claims. In response to this rejection, Applicants respectfully submit that amended independent Claims 1, 9 and 10 recite novel features clearly not taught or rendered obvious by the applied references.

Independent Claim 1 recites, a communication system for transmitting multicast data to a plurality of mobile stations *joining in a multicast group*, comprising:

¹ E.g., specification, p. 10, l. 5-12

a category manager configured to store categories of reception capability values showing reception capabilities necessary for receiving multicast data in the mobile stations;
a reception capability collector configured to ***collect the reception capability values of the mobile stations;***
a decider configured to decide a set of transmission methods corresponding to ***a set of the collected reception capability values of the mobile stations;*** and
a transmitter configured to transmit the multicast data ***using the decided set of the transmission methods corresponding to the set of the collected reception capability values.***

Independent Claims 9 and 10, while directed to alternative embodiments, recite substantially similar features as those emphasized above. Accordingly, the remarks and arguments presented below are applicable to each of independent Claims 1, 9 and 10.

According to the above noted features recited in amended independent Claim 1, reception capability values of mobile stations are collected from the mobile stations joining in a multicast group, and a set of transmission methods is dynamically decided according to a set of the collected reception capability values of the mobile stations. Consequently, as described in p. 2 of the specification, it is possible to transmit multicast data in a set of transmission methods, with which the reception capabilities of the mobile stations joining to the multicast group can be utilized more effectively, even when mobile stations joining to the multicast group dynamically varies.

For example, it is assumed that there is one mobile station which can demodulate only QPSK and nine mobile stations which can demodulate both QPSK and 16QAM. In that case, in the present invention, it is possible to transmit both multicast data modulated using QPSK for the one mobile station which can demodulate only QPSK and multicast data modulated using 16QAM for the nine mobile station which can demodulate both QPSK and 16QAM, instead of transmitting only multicast data modulated using QPSK while focusing on the one mobile station having the lowest level of reception capability. Consequently it is possible to

utilize the reception capabilities of the mobile stations joining to the multicast group more effectively.

Turning to the applied primary reference, Onoe describes a cooperative control method for end-to-end quality of service (QoS) control at transport layers and point-to-point control at network layers.² Onoe's method also includes QoS presentation functions including QoS level scheduling at application layers and establishment of QoS connections over ATM at data link layers to make the best use of the middle layers QoS controls.³

Onoe, however, fails to teach or suggest “***collecting the reception capability values of the mobile stations joining in a multicast group***” and “deciding a set of transmission methods corresponding to ***a set of the collected reception capability values of the mobile stations,***” as recited in amended independent Claim 1.

In rejecting Claim 1, the outstanding Official Action cites, *inter alia*, p. 1229 § 2.1 and 2.1.1, and Table 2 of Onoe. This cited portion of Onoe describes that QoS levels are specified according to potential factors, such as network and CPU capacities, and may be changed by dynamic factors, such as network and CPU loads, in order to dynamically form subgroups in static multicast groups and provide a proper QoS for each subgroup. Thus, Onoe describes that the QoS levels are categorized based on QoS parameters for each subgroup based on various network communication factors. Further, Table 2 of Onoe shows that the various QoS levels define what type of data is sent to the terminals participating in the multicast communication.

Here, “network and CPU capacities” of Onoe only indicate capability information of the entire system, and do not correspond to “***the reception capability values of the mobile stations joining to a multicast group***” as recited in amended independent Claim 1.

² Onoe, Abstract.

³ Id.

Onoe, therefore, fails to teach or suggest, “*collecting the reception capacity values of mobile stations joining in a multicast group*” and “deciding a set of transmission methods corresponding to *a set of the collected reception capacity values of the mobile stations.*” Consequently, in Onoe, it is not possible to utilize the reception capabilities of the mobile stations joining the multicast group more effectively, as the present invention.

Further, Onoe merely describes “deciding kinds of multicast data, such as, only L + R audio data, or both Left + Right and L - R audio data,” but fails to teach or suggest “*deciding a set of transmission methods,*” such as at least one of a coding rate, a number of repeating bits, a number of thinned bits, an interleaving length, a number of multiplexed codes, a number of information blocks, a modulation method, a coding method and transmission power.

Thus, Onoe fails to teach or suggest “*collecting the reception capacity values of the mobile stations*” and “deciding a set of transmission methods *corresponding to a set of the collected reception capacity values of the mobile stations*” as recited in amended independent Claim 1. Consequently in Onoe, it is impossible to utilize the reception capabilities of the mobile stations joining to the multicast group more effectively even when mobile stations joining to the multicast group dynamically varies, as claimed.

Further, Hundscheidt describes a method of subgroup multicasting in a communication network, but fails to remedy the above-noted deficiencies in Onoe.

Accordingly, Applicants respectfully request that the rejection of Claim 1 (and claims that depend therefrom) under 35 U.S.C. § 103 be withdrawn. For substantially similar reasons, it is also submitted that independent Claims 9 and 10 (and the claims that depend therefrom) patentably define over Onoe and/or Hundscheidt.

With regard to the rejection of Claim 8 under 35 U.S.C. § 103 as unpatentable over Onoe and Hundscheidt and Lundby, it is noted that Claim 8 depends from Claim 1, and is believed to be patentable for at least the reasons discussed above. Further, it is respectfully

submitted that Lundby fails to cure any of the above-noted deficiencies of Onoe and Hundscheidt.

Accordingly, Applicants respectfully request that the rejection of Claim 8 under 35 U.S.C. § 103 be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1, 3 and 5-13 is definite and patentably distinguish over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

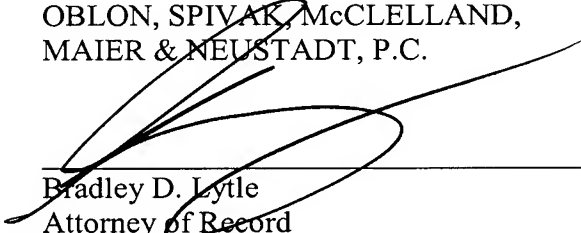
Respectfully submitted,

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